WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: WY2081

Title: Combining Modern and Paleo-Climate Data to Enhance Drought Prediction and Response

Focus Categories: Drought, None

Keywords: Climate, Drought

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Congressional District: 1

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Abstract

We propose to use data from a network of tree-ring sites in western Wyoming to determine the range of drought frequency, magnitude, duration and spatial extent in that region, along with the probability of experiencing severe conditions during a given drought cycle. We will also use these data to determine whether wet and dry periods occur in predictable cycles, and, if so, to determine the frequency and magnitude of those cycles. In addition, we will use our long-term climate records to explore the relationship between drought and large-scale circulation patterns, and to assess the usefulness of indices such as the Standard Precipitation Index as drought predictors and mitigation trigger points. Overall, by using a combination of modern and paleo-records, this project will provide valuable information on climate dynamics in western Wyoming, and a unique way to test the effectiveness of several important drought prediction techniques.